

groundwater and seawater or dirty river and lake water into safe drinking and sanitation water were being recently developed in the Netherlands.

The technologies were in different stages of maturity but not far from the point of market entry and all were in need of extra finance for the next steps, including demonstration pilots. The techniques were all fitting very well within the concept of the micro water solutions for developing countries.

In the Workshop in Salisbury practical examples of social and technical innovations will demonstrate how families, communities and schools can today derive clean sustainable water supply from river water, groundwater, rainwater and in the future from seawater.

The micro approach also opens up opportunities for private investors, Micro Finance Institutes (MFI) and individuals and other social and faith institutes to participate in smart, small-scale water projects in developing countries.

As many micro solutions have a macro effect, they can make a substantial difference.

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### **23. Water supply, sanitation and hygiene facilities and related education in faith-based schools**

**IRC. Annemarieke Mooijman and Christine Sijbesma, International Water and Sanitation Centre, The Netherlands**

#### **Introduction**

The holy city of Varanasi in India is known for its *ghats*, the sites where the River Ganges purifies the bodies of the live bathers and the ashes of the cremated dead. Close to them is the huge square mouth of the city sewerage system, which disgorges its load of blackwater into the river, irrespective of its religious functions. This combination of spiritual purity and environmental reality is not unique to India. In many countries the water sources used for religious functions are at the same time contaminated by people's wastes. Environmental challenges taken up by the faiths are widespread: water is a source of inspiration, a challenge and a threat in indigenous beliefs, Baha'i, Buddhism, Christianity, Hinduism, Islam, Judaism and Taoism<sup>26</sup>.

Spiritual linkages between faiths and waste are less evident. Where found, connotations are largely negative. Waste is associated with impurity; because it causes bad smells and pollution and attracts vermin, many religions prescribe the avoidance of physical contact with wastes for cleanliness and spiritual reasons. Brahmins, e.g., must defecate beyond the distance of an arrow shot from their home, and never in a temple enclosure, at the borders of a river, pond or spring, or in a public place. During the act, Muslims cannot face towards

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<sup>26</sup> Lida Scheldwald & Linda Reijerkerk, *Water: a way of life. Sustainable water management in a cultural context*. London: Taylor & Francis, 2009

Mecca and Hindus must not face celestial bodies, a temple, priest or holy tree<sup>27</sup>. Most faiths also have waste cleaning rituals before religious functions or do not allow such functions in an unclean state. At the same time, many cultures have valued and used dry human and animal waste as fuel and wet waste as manure.

Understanding of how uses of water and waste can transmit disease is much more recent. Only in 1854 Dr. John Snow found out that one pump was the common link in the deaths of 500 people in ten days, because of pollution by the excreta of patients who used nearby soakpit latrines<sup>28</sup>. Table 1 explains how different diseases are spread from one patient to another through water and waste.

Table 1: Transmission of infectious disease via water and waste

Type of disease	Transmission mechanism	Diseases transmitted
Water-borne	Drinking contaminated water	Cholera, Diarrhoeas, Dysentery, (Para)Typhoid,
Water-washed (water-scarce)	Lack of washing with water and soap/soap substitute	Cholera, Diarrhoeas, Dysentery, (Para)Typhoid, Eye infections (Conjunctivitis, Trachoma), Skin infections (Ringworm, Scabies, Yaws), Louse-born infections, Plague (via fleas), Acute Respiratory Infections
Water-based	Transmitted via hosts (shellfish, snails) that live in water	Guinea worm (or Dracunculiasis), Schistosomiasis (or Bilharzia)
Water-related vectors	Transmitted by flies or mosquitoes that breed in water	Dengue, Malaria, Filariasis (or Elephantiasis), Yellow fever, River Blindness (or Onchocerciasis), Sleeping Sickness
Waste (Human faeces and faeces of pigs, chicken)	Via the 6Fs: Fluids (water), Flies, Fingers, Food and Fields (fertilized with raw manure)	Cholera, Diarrhoeas, Dysentery, (Para)Typhoid, Roundworm, Whipworm, Pinworm, Beef and pork tapeworm, Hookworm
Solid Waste (Refuse)	Transmitted in human excreta (often included in the waste) and via flies, mosquitoes, rats, dogs	Cholera, Diarrhoeas, Dysentery, (Para) Typhoid, Worm Infections, Dengue, Yellow Fever, Plague, Rabies, Scabies, Upper Respiratory Tract Infections

Of all cases of environmental disease, half are diarrhoeas and acute respiratory infections (ARI). They are also the most common causes of death of children under the age of five and can be prevented at low costs.

### ***Building and maintaining water supply and sanitation facilities in schools***

Linking faith with construction of water facilities and toilets in schools does not sound like an obvious link, yet it is important. Water plays a central role in many religions and beliefs around the world: source of life, it represents (re)birth. Water cleans the body, and by extension purifies it, and these two main qualities confer a highly symbolic (even sacred) status to water. Water is therefore a key element in ceremonies and religious rites<sup>29</sup>. This is reflected in the way people use water, in the way they design water systems and the need for accessibility of water for cleansing after toilet use or washing hands.

Water provision for drinking water, hand washing, flushing and cleaning, school meal preparation, etc. and the provision of clean toilets and urinals in schools are needed to keep children healthy. Anybody who has children in school knows that schools are places where children get infected. Spreading of diseases can happen very quickly in schools. They are places where many children gather together for many hours a day in often cramped spaces with limited ventilation, bad hygienic conditions, no hand wash facilities with soap, toilets in

<sup>27</sup> Reginald Reynolds, Cleanliness and Godliness. Garden City: Doubleday, 1946.

<sup>28</sup> Maggie Black & Ben Fawcett. The Last Taboo: Opening the Door on the Global Sanitation Crisis. London: Earthscan, 2008.

<sup>29</sup> Quoted from: <http://www.worldwaterday.org/page/442>

bad repair etc.. A study in Colombia showed that there is a direct link between diarrhoea and hygiene<sup>30</sup> in schools: more than 40% of the cases in schoolchildren could be attributed to transmission in school rather than at home.

In addition to being important for the children's health, toilets and particularly hygienic toilets are important learning tools for children. Teachers can use them to teach children about hygienic behaviour and sanitation as well as about the importance of using toilets and avoidance of discrimination in their cleaning. If the example that children experience at school (often the only example of a toilet they see) is not a good experience (= dirty, smelly toilets), it will be difficult to motivate them to promote toilets in their own homes and community or to construct toilets when they are grown-ups themselves.

Still too often technical design choices for schools (and other places) are based on the available financial resources, physical condition and socio/economic circumstances, etc. Although this is understandable from a programmatic point of view, there are several design factors that go beyond those technical considerations and which are extremely important to for the *acceptance and sustainability* of the facilities<sup>31</sup>. Those factors are discussed in the text below<sup>32</sup>.

### **1. Facilities should encourage hygienic behaviour**

If hygienic behaviour is too difficult to apply, it will be difficult to motivate children to follow all the steps needed - they will tend to skip some and thus take potential health risks. Therefore, facilities must be close to the schools, have sufficient capacity, be simple to use, provide for hand washing and anal cleansing, and water and soap should be available at all times.

### **2. Facilities are designed with involvement of the users**

Active involvement of the users is essential in all phases of the design process. In most countries standardised designs are used for facilities in schools to reduce costs and control quality. For example the Government of India recently published a book with standard designs for public schools<sup>33</sup>, but no standards for religious schools have been developed. Using standards can be a good solution, but applying a standard design too rigidly can lead to ignoring specific local pre-conditions and needs.

In general, when properly coached and guided, teachers and children are perfectly able to assess their existing practices and find solutions for their own needs. Their involvement during the design stage of hygiene, sanitation and water facilities will lead to better solutions and increased acceptance of these solutions.

### **3. Appropriate dimensions and adjustments for children**

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<sup>30</sup> Koopman, J. S. (1978) *Diarrhea and school toilet hygiene In Cali, Colombia*. *Am J Epidemiol*107:412-420.

<sup>31</sup> Facilities refer to infrastructure for water provision, handwashing as well as toilets and urinals

Zomerplag, J. and A. Mooijman (2005) *Child-Friendly Hygiene and Sanitation Facilities at Schools*, IRC International Water and Sanitation Centre in cooperation with UNICEF, available at <http://www.irc.nl/page/9587>

<sup>32</sup> Facility refers to facilities for water provision, handwashing as well as toilets and urinals

<sup>33</sup> DDWS, DEEL and UNICEF (2008), *"An inclusive approach for School Sanitation & Hygiene Education. Strategy, Norms & Designs"*, UNICEF, New Delhi, India

Adapting designs for children is about making facilities accessible and comfortable for children. Children are smaller and are not as strong as adults. For the youngest children, facilities and adaptations should be made to allow for adults to supervise and/or help when children use the toilets, hand wash facilities or water points. Although it sounds obvious, this also has to be reflected in the designs.

In larger schools, it is recommended to build separate facilities for the younger children, the older children, separated for girls and boys (particularly important for adolescent children in all schools) and female and male teachers. In small schools, when the same facilities are used by different age groups, special provisions can be made to allow smaller children to make use of the facilities, such as a step in front of the seat or an additional seat cover with a smaller hole.

#### **4. Enough capacity and minimal waiting time**

For water use in schools, SPHERE<sup>34</sup> applies a ratio of 3 litres/student/day for drinking and hand washing. When there are not enough toilets, taps and waste bins for the number of school children, then children inevitably search for other places to urinate and defecate, 'forget' to wash their hands, throw garbage on the ground or drink water from unsafe sources. Ensuring the right capacity in facilities is usually not a matter of applying a simple ratio. Literature and country standards use a ratio of 1 toilet for 20-40 children. There are some other factors that determine the required capacity besides the total number of school children, such as the times when children are allowed to go to the toilet/drink water/ wash hands, number of classes and the future growth of the school population. Arguments that applying this ratio is too costly can be partly compensated by the construction of less costly urinals instead of latrines for both girls and boys. A study from UNICEF Bangladesh revealed that only about 6-10% of the children who visit a school toilet go there for defecation. Therefore, for 90% of the toilet visits, a urinal serves the needs.

#### **5. Needs and roles of girls**

Increasingly, evidence is available that the absence of toilets or of separate toilets in schools for girls is an important reason for parents not to send girls to school<sup>35</sup>. If adolescent girls<sup>36</sup> attend schools during their menstruation, the availability of girls-appropriate toilets and water supply is essential to comfortably change and (often) dispose of sanitary pads and wash themselves in privacy. If not available, adolescent girls may be unable to remain comfortably in class. Although so far scientific evidence is limited, the lack of sanitary protection during menstruation is often mentioned by the girls as a barrier to their regular attendance in school. In reality this might also be motivated by religious and cultural beliefs and habits.

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<sup>34</sup> <http://www.sphereproject.org/> The Sphere Project was launched in 1997 by a group of humanitarian NGOs and the Red Cross and Red Crescent movement. Sphere is based on two core beliefs: first, that all possible steps should be taken to alleviate human suffering arising out of calamity and conflict, and second, that those affected by disaster have a right to life with dignity and therefore a right to assistance.

<sup>35</sup> Another School Barrier for African Girls: No Toilet By Sharon LaFraniere The New York Times, Friday 23 December 2005 [http://www.truthout.org/issues\\_05/122305WA.shtml](http://www.truthout.org/issues_05/122305WA.shtml); Lack of Sanitaries Force Girls Out of School . New Vision (Kampala), January 6, 2004, <http://allafrica.com/stories/200401060305.html>; Not only girls' toilets, but clean and safe girls' toilets in Notes and News No. 3, 2001, [www.irc.nl](http://www.irc.nl); Afghanistan: Girls' school attendance doubles in two years, by Mary Kate MacIsaac - Communications Manager, Afghanistan, World Vision, May 17, 2006; Benson, Carol, Girls, Educational Equity and Mother Tongue-based Teaching, United Nations Educational, Scientific and Cultural Organization, Bangkok, 2005.

<sup>36</sup> This text has been adapted from: Kirk, J. and Sommer, M (2006), "Menstruation and body awareness: linking girls' health with girls' education" Gender and Health Special. Royal Tropical Institute (KIT), Amsterdam, Netherlands

This situation means that for many girls and young women it is preferable to stay at home during menstruation and not attend school at all. At home they do not have to worry as much about sanitary protection, nor about having adequately concealing clothing. Regular absence from school for several days a month (10-20% of all school days) can, even in the short term, have a negative impact on a girl's learning and therefore on her academic performance in school. Frequent absence will lead to insufficient learning for most girls and therefore poor results in the long term. Eventually this can even lead to dropping out completely.

The location of facilities is important. Girls and women will not use toilets or collect water from locations that are situated in an "unsafe" location because of the risk of harassment by older students, teachers or others or because of religious or cultural beliefs and restrictions that people should not be seen when visiting a toilet.

## **6. Special needs of children with disabilities**

About one in five of the world's poorest people is disabled. Exclusion from basic facilities can result in isolation, poor health, and even poverty. The lack of proper school toilets can deter disabled children from even entering school. Only rarely, adaptations for disabled people are incorporated into the design of school facilities, although, in general, it demands little or no additional expense. Adaptations should be made for the following three main categories of disabled children, who have the potential to enter regular primary schools:

- Blind children and children with poor vision: special grips and guiding systems as well as proper lighting for the poor-sighted.
- Children in wheelchairs or with crutches: provision of ramps, wider doors, and special grips or foldable seats.
- Children with missing or paralyzed arm(s): lids, taps, and knobs that can be opened with one hand or operated with the feet and are not too heavy.

Faith representatives can play an important role in getting this group of children to school.

## **7. Stimulate children's learning and development, and ensure that educational tools are designed in an age-appropriate way**

Younger children do not possess the same ability to learn complex concepts as older children, and they learn differently. This is also important for the design of facilities in schools. Learning and development can best be stimulated interactively by learning, showing *and* doing. Particularly, facilities can provide the opportunity for this interaction and are a potential extension of the learning environment and make it a powerful tool to develop appropriate hygiene habits.



Children are stimulated by their surroundings in various ways. Besides visual perception, this also occurs through sharing spaces with others, being responsible for keeping them clean, etc. The different means of stimulation can be categorized into the following types of development.

- **Environmental development:** Children receive information from the environment by seeing, smelling, hearing and touching and they use this information in their intellectual development. Spaces they encounter, including water, sanitation and hand wash facilities, can provide a range of positive and negative experiences related to colours, smells, shapes and sounds.
- **Social development:** The layout of spaces and the way they are used can encourage contact with others or offer seclusion. This is relevant for toilets, because they require both privacy and sharing with others.
- **Creative development:** Children's creativity can be stimulated by giving them the opportunity to make the spaces their own and letting them adapt them to better suit their needs. Children can decorate walls or solve functional problems themselves, which will encourage creative thinking.
- **Physiological development:** The use of facilities can help to develop necessary motor skills in young children, such as fine-tuning of the physical movements. Using the facilities requires large motor skills (climbing stairs, etc.) as well as fine ones (opening taps, etc.).

## **8. Appropriate locations for toilets and water supply**

Even a well-designed facility has the risk of not being used, if it is located in a poorly considered place. Finding the right location for facilities requires looking at and consultations about different practical, environmental and cultural aspects. The children have to feel secure, need some privacy and it should be possible to supervise the younger children. Furthermore, facilities must be located away from potential flood areas and contamination of drinking water sources avoided.

## **9. Low-cost solutions without compromising quality**

Best are those facilities that are affordable, durable, encourage proper use, and are easy to maintain and keep clean. For example: proper drains for excess water at wells, surfaces that come into contact with faeces or urine must be impermeable and easy to clean etc. Investing in good quality, sustainable facilities means investing in overall public health. Moreover, despite higher initial investment costs, money will be saved in the long run, because the facilities have a longer lifespan and require less maintenance. On the other hand, this does not mean that the most expensive options are best. It is always a matter of finding the right balance between costs and quality.

## **10. Prevent harm to the environment**

Children are best sensitised to environmental issues in the school setting where they are learning about various issues related to daily living. It is important to reduce or prevent negative impacts on the environment, which pose hazards to public health at the same time.

Some facilities may contaminate soil and groundwater, while others may produce wastewater flows that must be managed. Environmental sustainability should be an integral part of the design, implementation, operation and maintenance of facilities, as well as the accompanying hygiene education program. The challenge is to promote awareness on environmental issues, while providing incentives and tools to address them.

### **11. Operation and maintenance plans**

A well-designed facility will lose its purpose if it is not properly looked after. A good operation and maintenance plan and implementation will not only indicate who is responsible for cleaning, and maintenance but also the costs involved. It will also ensure that:

- It involves children, teachers, parents and the local committee in the continuous process of monitoring and improving hygiene practices at school;
- It is developed and agreed upon before the facilities are completed;
- It is non-discriminatory and protects the best interest of children at all times: child participation should never be child labour! And girls and boys should participate equally in cleaning and maintenance.

### **12. Have financial means to keep the facility clean and in good shape**

For the development of long-term, sustainable and large-scale programmes, financial planning and management is crucial. Over recent years, most schools programmes in South Asia have been moving away from small-scale, fully subsidised programmes and have entered into a phase where programmes have to be transformed into financially sustainable ones. So far, many programmes have had difficulties in making the transition, due to capacity problems and the lack of financial planning and management. This can be overcome by addressing financial sustainability from the planning and start-up phase on. Clear financial policies can help to underpin a more efficient, equitable and sustainable use of resources through the promotion of *cost recovery* (e.g. a contribution to be paid by parents) and financing by religious institutions (if it is a religious school) or government partners (for public schools).

### ***Integrating water, sanitation, hygiene and the environment in school education***

Good education in school about water, sanitation and hygiene is as important as good sanitary facilities: both components go hand-in-hand. In 2002, UNICEF, the United Nations Children's Programme was cooperating with over 50 countries to achieve integrated WASHE (water, sanitation, health, hygiene and environment) programmes in schools, an increase of 43% in six years<sup>37</sup>. Nine years of cooperation between UNICEF and IRC have resulted in a number of lessons on effective education programmes on water supply, sanitation and hygiene, especially in primary schools. These have been summarised below.

#### **1. Adjust education to the child-development cycle**

Children have different needs and potentials for learning at different ages. *Young children aged 2-4* enjoy learning new skills, playing with and handling objects. They like activities

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<sup>37</sup> Every child clean through school hygiene. Background paper of an E-conference on school sanitation and hygiene education, UNICEF and IRC, 2002.

such as telling stories and singing, which develop their language skills, and miming and acting as adults, who are their ultimate role models. At this age they can learn how to use the toilet and wash their hands and take some responsibilities for hygiene. The teacher can also start playful activities to 'clean' the facilities or refill the water reservoir of a hand washing facility. These are, however, learning activities rather than participation activities. Squatting sideways over a squatting toilet enables young children to hold on to a handrail, which makes toilet use less challenging for them.

*Children aged 5-8* are imaginative. They discover the world and their own capabilities in a playful way. In the meantime, they gain self-confidence and make the first steps towards independence. They experience the positive effects of personal care for their appearance and value this in a simple way: looking and smelling good means to feel good. In this age group, children can start to be actively involved in making and implementing simple plans for good hygiene, but they cannot yet take full responsibility. Physical games and activities are important to use pent-up energy. Sweeping the classroom, filling soap or water containers, putting different types of solid wastes in separate boxes and bins, etc. must still be closely guided by adults, including for safety reasons.

*The age group of 9-12 years* old can work well together with others and discuss experiences and practices with friends. They become aware of the consequences of poor hygiene practices and begin to see relationships between theory and practice, although abstract concepts are still difficult. They like watching and taking part in practical demonstrations and are very helpful. They also like to be given particular responsibilities. At this age, children also learn that different means or practices can lead to the same overall result and are open to comparing solutions.

Girls and boys can now be involved as groups in activities to plan, maintain and manage good hygiene and sanitation, do home assignments, such as simple structured observations for arithmetic and hygiene lessons, and do outreach activities with younger siblings at home. Knowledge on physical development and building of self-confidence and respect helps early maturing girls and boys. They are also helped by there being a trusted same-sex teacher to whom they can go for questions and with problems. Girls who start to menstruate need access to sanitary napkins. In some programmes, they learn how to make these themselves.

*Twelve to fifteen year olds* begin to develop social and analytical skills for exploring their position in the community. They can question gender and socio-economic differences and are aware of their own development and growth and develop a desire for gender-related privacy. They start to understand abstract concepts around hygiene, environment and social relations. Respectful learning about personal female and male hygiene becomes important, to begin with in same-sex groups and using indirect methods such as stories and drawings to facilitate discussion. Pre-adolescents like to have tasks and be trusted to carry them out. They begin to take their own responsibilities and develop a sense of social justice. At this age, girls and boys can be actively involved in the planning, construction, operation and maintenance of facilities. They can form their own school health clubs, enjoy outreach work in the community and can learn to use waste productively through practising segregation and recycling in school and at home.<sup>38</sup>

## **2. Use participatory learning methods**

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<sup>38</sup> More details in Postma, Leonie; Getkate, Renate and van Wijk-Sijbesma Christine (2004). *Life Skills-Based Hygiene Education: A guidance document on concepts, development and experiences with life skills-based hygiene education in school sanitation and hygiene education programmes*. Delft, The Netherlands, IRC International Water and Sanitation Centre. (Technical Paper Series; no. 42). [http://www.irc.nl/content/download/11504/168690/file/life\\_skills.pdf](http://www.irc.nl/content/download/11504/168690/file/life_skills.pdf)



Most teachers in primary and secondary school have been trained in traditional teaching approaches, in which there is very little room for active participation by the students other than answering questions. While class instruction has its place, children greatly enjoy and benefit from more participatory learning methods. These methods involve children actively in the learning process and allow them to learn from what they do themselves and from the other children. There are many participatory methods - some are listed in Table 2.

Table 2 Examples of participatory methods in schools<sup>39</sup>

Participatory methods for ages 4-7

- Listening to and telling stories
- Reciting poems and songs and singing songs
- Drama/short skits
- Seeing and doing various types of puppet plays
- Simple sorting games
- Language and number games and assignments
- Reading and reacting to stories
- Walks, doing simple observations
- Skills demonstrations, with peer observation and analysis
- Movement games, competitions
- Conversations and discussions
- Drawing, painting, colouring, claying
- Doing simple tasks

Participatory methods for ages 8-12

- Reading and analysing stories
- Reciting poems, making and singing songs
- Doing quizzes
- Conversations and discussions
- Drama, role plays, pantomime and dancing
- Drawing and painting
- Making various types of models
- Writing compositions and creative writing
- Brainstorming
- Excursions
- Skills demonstrations
- Peer observations and analysis
- Language and mathematics games
- All kinds of competitions

### 3. No need to use costly equipment and material

Contrary to what is often thought, participatory education in water, sanitation, hygiene and the environment does not require special investments, such as a toolkit with specially designed and printed material. For many activities, teachers can use what is already available: blackboard, chalk, paper, pencils, water, sand, pebbles, etc.

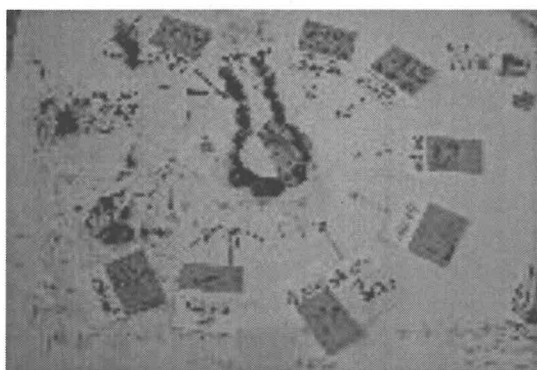


Fig. 1 Well model with types of water use and types of pollution

<sup>39</sup> As above. The book also contains a description of many participatory learning methods.

Fig. 1, for example, shows a small model of a dug well made by students in Vietnam. On slips of paper, the children first wrote each purpose for which the well water was used (ways in which water goes out) and then on a second set of slips in which ways people contaminated this water (types of pollution going in). The teachers used this activity in environmental education with older children and also with the parents on parents' day.

In another game, children from a tribal region in North Vietnam sorted pencil drawings of different utensils for storing and drawing drinking water from the least to the most risky. Under each drawing they placed slips with the names of the utensils in their tribal language and other slips with the names in Vietnamese. The teachers later reused the papers for a competition by timing the speed with which the children could lay out the mixed-up drawings and slips in the correct position.

Learning can be combined with physical activity. In a lesson in a dry part of Sri Lanka, the teacher let two lines of 8-10 year old children race against each other to two buckets of water, where two children would stand ready to pour water over their hands, give them a small piece of soap to wash their hands and then pour more water to rinse off the soap (Fig. 2). The race stopped as soon as the groups had used up their water. Besides the expected winners on speed, the teacher announced as the real winners the group that had taken more time for hand washing and the group with the most hand washers: they won the prizes for the best hygiene and the most economic use of the water.

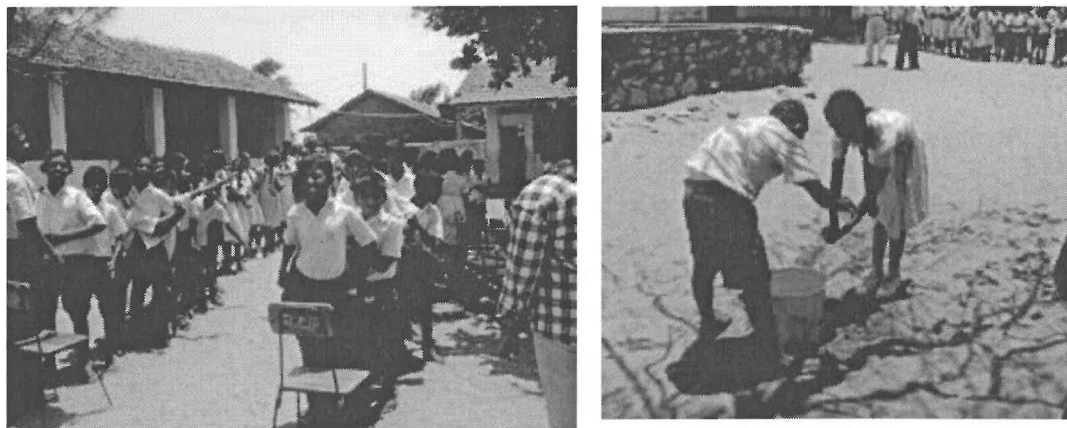


Fig. 2 Race on water use for hand washing, Karukapone primary school, Sri Lanka

#### **4. Integrate WASHE education in the curriculum**

Irrespective of the value of education on health and environment, good exam results are the prime objective of the teachers, children and parents. Including WASHE topics into the school curriculum and exam therefore makes all the difference. Integration is possible under different subjects, e.g. under science, social studies and/or civic education (Zambia).

#### **5. Practice multi-purpose learning**

Another way to make it easier for teachers and students to address water, sanitation, health and the environment (WASHE) as part of school education is to combine this learning with practising basic education skills such as reading, writing, arithmetic and geography. The above examples from Vietnam linked WASHE with writing, reading and language skills. Through simple home surveys, e.g. on what sources are used for drinking water, how the

water is stored and drawn, and if the family has a toilet, a bathing place and soap, students have gathered WASHE statistics and used them in class to practise counting, adding, subtracting and percentage calculating skills as well as discussing health risks and ways to measurably improve home conditions. Children have also learned to draw community maps, in which they noted water sources, open defecation areas and houses with sanitary and no, or unsanitary toilets.

## 6. Link with broader values and skills

Besides scholastic knowledge, attitudes and skills, children learn many other skills from their activities and interactions in school, which when developed well will serve them during their whole lives. The life skills approach (Table 3) uses learning methods that consciously promote these more generic skills for their current and future lives. A related approach is Value-Based Education, developed by the African Institute of Sathya Sai Education in Ndola, Zambia. As shown by its name, the approach bases water education on five basic human values and related sub values: *Truth* (with e.g. discrimination between true and false, good and bad, respect for all religions and secularism), *Love* (with sincerity, tolerance, friendship, kindness to animals), *Peace* (with freedom from jealousy, greed, pride, self-discipline, self-control and self-respect, power of concentration, silence), *Right Conduct* (with e.g. cleanliness, service to others, leadership, conservation of nature and the environment) and *Non-Violence*, with among other things, democratic decision making, sense of social justice, kindness, courtesy and concern for others<sup>40</sup>.

Table 3 Five categories of generic skills developed through life skills education

Inter-personal Skills	Skills for Building Self-Awareness	Values Analysis & Clarification Skills	Decision-Making Skills	Coping & Stress Management Skills
<ul style="list-style-type: none"> <li>- Empathy building</li> <li>- Active listening</li> <li>- Giving &amp; receiving feedback</li> <li>- Non/Verbal communication</li> <li>- Assertion &amp; refusal skills</li> <li>- Negotiation &amp; conflict management</li> <li>- Cooperation &amp; teamwork</li> <li>- Relationship &amp; community building skills</li> </ul>	<ul style="list-style-type: none"> <li>- Self-assessment skills</li> <li>- Identifying personal strengths &amp; weaknesses</li> <li>- Positive thinking skills</li> <li>- Skills for building self image and body image</li> </ul>	<ul style="list-style-type: none"> <li>- Skills to understand different social norms, beliefs, myths, ethics, culture, gender, diversity, poverty</li> <li>- Skills for identifying what is important, influences on values &amp; attitudes, and aligning values, attitudes, behaviour</li> <li>- Skills for recognizing &amp; acting on discrimination and stereotypes</li> <li>- Identifying &amp; acting on rights, responsibilities &amp; social justice</li> </ul>	<ul style="list-style-type: none"> <li>- Critical &amp; creative thinking skills</li> <li>- Problem solving skills</li> <li>- Analytical skills</li> <li>- Skills for generating alternatives</li> <li>- Information gathering skills</li> <li>- Skills for evaluating information e.g. the media</li> <li>- Skills for assessing risks &amp; consequences</li> <li>- Goal setting skills</li> </ul>	<ul style="list-style-type: none"> <li>- Self control skills</li> <li>- Coping with (peer) pressure</li> <li>- Time management skills</li> <li>- Dealing with emotions: grief, anxiety</li> <li>- Dealing with difficult situations (conflict...also loss, abuse trauma,)</li> <li>- Help seeking skills</li> </ul>

Source: UNICEF Workshop on Life Skills Education, New York, 2000.

## 7. Practice learning in school

It is still quite common that children learn about water, sanitation and hygiene in school, yet cannot apply their learning in school, because they lack the fundamental facilities, or they are not functioning, are so dirty that they cannot be used, or have turned into health

<sup>40</sup> Victor Kanu, Water Education: A Human Values Approach, in UN Habitat, Water Education in African Cities, Report of an Expert Group Meeting. Johannesburg, South Africa, 30 April-2 May, 2001, pp. 20-33.

hazards. A good WASHE programme obviously combines good facilities, education and practices.

### **8. Recognise and prevent/stop misuse**

Quite recently, more information has also become available on the negative effects that poor design and supervision of school water and sanitation facilities and a lack of communication and trust between teachers and students can have for vulnerable groups. Children can be quite cruel, and distant toilets are typical places where a group of boy-bullies or a girl 'queen' and her followers tease children that are younger, weaker or picked on for other reasons. Toilets are also typical locations for wrong student conduct - smoking, drinking, sexual behaviour – and group initiation. Colleagues in one workshop on WASHE also told about cases of misuse of power by teachers, such as sexual abuse of girls who have to bring water to the house of male teachers living at schools without water supply.

### **9. Monitor and evaluate conditions, practices and progress**

WASHE facilities and education approaches can be simply evaluated and monitored for progress. Presence, functionality, hygiene and (non/partial) use of supply of (drinking) water, toilets and hand washing facilities with soap are easy to observe. For the evaluation of the education approach, the joint school WASHE programme of the Government of India and UNICEF used a participatory scoring system of five scales of 20 marks each, with at the lowest (0) level no hygiene education at all, while at the highest level (100) hygiene education was integrated in the curriculum, used participatory learning methods and materials, and teachers involved children in monitoring and upkeep of school sanitation facilities<sup>41</sup>

### **10. Reach out to homes and communities**

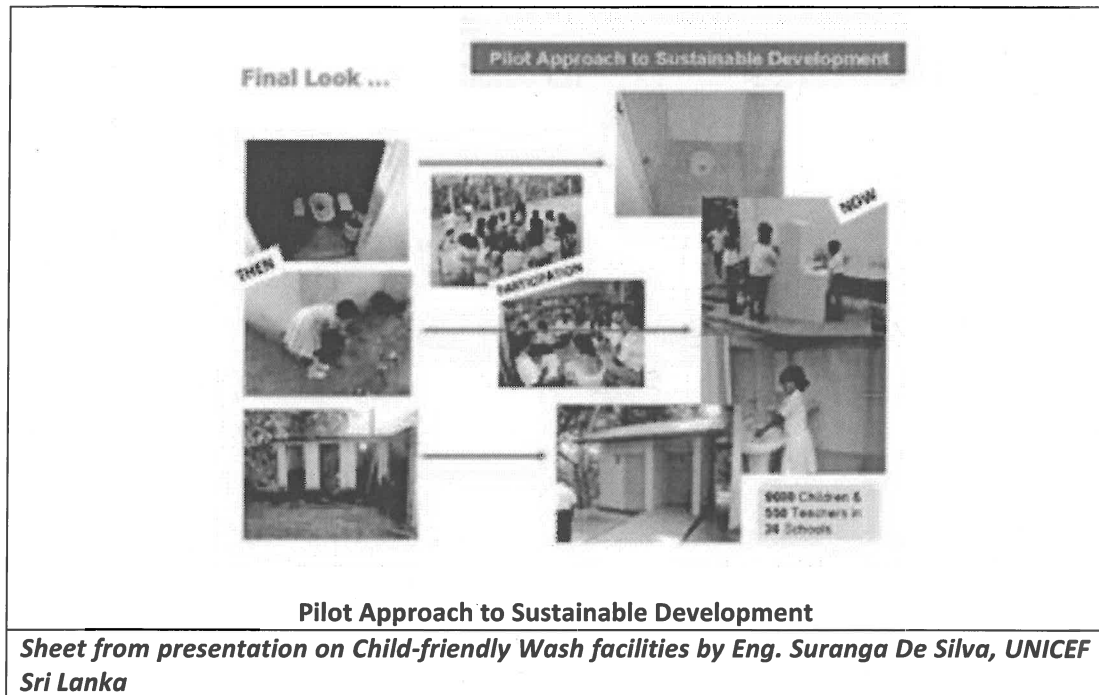
Last, but not least, WASHE programmes offer good opportunities for two-way cooperation between the schools, parents, the religious community, local businesses and local institutions, such as councils and water/health committees with homes and community.

Parents and communities frequently support local schools in improving their WASHE facilities and school children bring information home and encourage improvements at home. The child-to-child programme promotes improvements especially through communication between children, e.g. reaching out to younger brothers and sisters. In programmes in Nepal and Pakistan, schoolteachers successfully promoted that parents built low-cost toilets and used them with all family members.<sup>42</sup>

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<sup>41</sup> Jeremy Colin et al., UNICEF-Government of India Child's Environment Programme 1999-2003. Annexes to Part One: Evaluation Report, Loughborough University and IRC, June 2004.

<sup>42</sup> See Chapters 9 and 14 in J Wicken, J, Verhagen, J, Sijbesma, C, Da Silva, C and Ryan P (eds) 2008. Beyond construction: Use by all, A collection of case studies from sanitation and hygiene promotion practitioners in South Asia. London, UK, WaterAid; Delft, the Netherlands, IRC and Geneva, Switzerland, WSSCC. <http://www.irc.nl/page/40450>



## Conclusion

Good sanitation and hygiene habits and the protection of the environment are values common to all Faiths. So are many of the values developed in the life skills and value-based education approaches. With globally about 64% of schools being faith-related, there are unique opportunities and benefits from linking spiritual learning with learning on water, sanitation, hygiene and the environment, and the improvement of water and sanitation facilities in schools. Materials on designs, strategies, approaches and results are widely available<sup>43</sup>; what remains is their adjustment and use in faith-based education and the development of school water, sanitation and hygiene education programmes as part of the education systems of individual faiths.

## 21. Micro Water Facility

MWF. Frederick Claasen, the Netherlands

<sup>43</sup> The most complete resource site is the IRC-UNICEF website <http://www.schools.watsan.net/> Here you find key publications and links to other websites. More can be found on the IRC web site <http://www.irc.nl/sshe>. The World Bank, WSP, UNICEF toolkit on hygiene, sanitation and water in schools for in-depth information on setting up activities in schools [www.schoolsanitation.org](http://www.schoolsanitation.org). Some key publications are (1) Towards Effective Programming for WASH in Schools: A manual on scaling up programmes for water, sanitation and hygiene in schools <http://www.irc.nl/page/37479>, on school hygiene education <http://www.irc.nl/page/26444> and on child-friendly WASH facilities <http://www.irc.nl/page/9587>

